

thrombosis, collateral branch thrombosis. We used a new concept of stent, the Multilayer Flow Modulator (MFM\*) to treat An. and try to avoid some drawbacks encountered with endografts.

**Methods:** This MFM\* is a 3 Dimensional braided tube made of several inter-connected layers without any covering. Our earliest in vitro (theoretical simulation), computerized Fluid dynamics, Molecular Modelization and in vivo tests demonstrated that this MFM\* reduces the velocity in the aneurismal sac up to 90% by modifying the hemodynamic conditions. A saccular aneurysm without collateral branch will thrombose quickly. If a collateral branch is present the flow is directed towards this branch leading to shrinkage of the aneurysm. Animal experiments show excellent results. Moreover, as demonstrated in animal and human studies this MFM\* preserves the collateral branches allowing the possibility to cover any artery without compromising the flow (renal, digestive arteries, supra aortic vessels...)

**Results:** 44 peripheral An. (iliac:23, femoral:1, popliteal:5, renal:8, mesenteric:2, carotid: 2, Subclavian : 2, Celiac trunk :1) were treated with the MFM\* (male:31, mean age 62±8 y) (57 stents  $\phi$  5 to 14 mm; length 40 to 120 mm) were implanted to treat these aneurysms, by femoral approach (39 cases), brachial approach (1 case), Technical success in all patients. No complications. All An. thrombosed with diameter reduction in some pts. The thrombosis could take several weeks depending on the importance of collateral branches. 6 month to 36 month follow up will be presented and we will discuss the time needed to achieve exclusion of the An. All the side branches remained patent.

**Conclusions:** A new concept of stent, the MFM\* (without any covering) is developed to treat An. It opens a new approach to treat peripheral An. avoiding most of the complications encountered with current endovascular techniques. The results obtained seem promising. A larger study is ongoing.

#### TCT-517

##### Endovascular Management of Massive Broncho Pulmonary Fistula – a Series of 28 Cases

NARENDRA KHANNA<sup>1</sup>, Suparna Rao<sup>2</sup>

<sup>1</sup>INDRAPRASTHA APOLLO HOSPITAL, New Delhi, New Delhi, <sup>2</sup>Indraprastha Apollo Hospitals, New Delhi, New Delhi

**Background:** Broncho –Pulmonary Fistula (BPF) occurs in 2-3 per 100, 000 population. They could be congenital or acquired and are usually associated with Hereditary Hemorrhagic Telangiectasia (70 %). They could be either single or multiple, Central ( PA to LA Fistula ) or Peripheral ( PA to PV Fistula ). Usually they are asymptomatic ( 30 – 55 % ) but sometimes they present with cyanosis, dyspnea on exertion, neurological symptoms (migraine, vertigo, TIA, paresis, numbness, syncope, confusion, cerebral abscess, seizures) or haemoptysis and haemo thorax. Diagnosis is confirmed by contrast (air bubble) echocardiography or CT / conventional angiography. Pneumonectomy, lobectomy, local excision and ligation of the pulmonary artery used to be the available treatment but carried a significant morbidity and mortality. Currently Endovascular Treatment is emerging as a promising alternative and our series is perhaps the largest one.

**Methods:** The diagnosis is confirmed by angiography, which is performed in many views to delineate the point of communication. Long sheath is introduced and a Berman catheter is then advanced via the long sheath and the balloon is inflated. The large flow across the BPF guides the balloon catheter to the branch supplying the BPF. The Fistula is closed either by coil embolization ( Bioprote assisted ) or Amplatzer ASD Device or Vascular Plug ( I , II , III ). The saturations (ideally PO2) usually normalizes after complete occlusion.

**Results:** N : 28 AGE : 26 +/- 3.5 YRS CENTRAL : 3/28 PERIPHERAL : 25/28 COIL EMBOLISATION : 8 DEVICE CLOSURE : 23 ( in 3 pts add coils were used ) TECH SUCCESS : 100% REPEAT PROCEDURE : 5/28 SpO2 Pre op : 70 +/- 2% SpO2 Post op : 95.4 +/- 3%.

**Conclusions:** Most of the massive Broncho Pulmonary Fistula can be managed by endo vascular techniques and pneumectomy or any other major surgery can be avoided. This series of 28 successfully treated cases of Central and Peripheral Broncho Pulmonary AVM is probably one of the largest series.

#### TCT-518

##### Is The Retrieval Of IVC Filter Safe?

Maddury Jyotsna<sup>1</sup>, Madhavpeddi S. Aditya<sup>2</sup>, Vibhav Sri Narayana Janaswamy<sup>3</sup>

<sup>1</sup>Nizam's institute of medical sciences, Hyderabad, IN, <sup>2</sup>nims, Hyderabad, India,

<sup>3</sup>Osmania Hospital, Hyderabad, India

**Background:** We wanted to study the feasibility and safety of IVC filters retrieval in patients with DVT with pulmonary thromboembolism (PTE) with IVC filter.

**Methods:** We retrospectively analyzed the data of patients who presented with DVT with massive or sub-massive PTE and were treated with catheter thrombolysis and IVC filter (Eclipse vena caval filter from Bard company) implantation in our unit in the year 2012 -2013. CT pulmonary angiogram, venous colour Doppler and in some cases MR venogram was done within 24 hrs before retrieval of filter. In conventional contrast venogram, if the filter is patent and free from significant clot burden (< 25% filled with thrombus), removal is then performed. Success of retrieval was defined as complete and intact whole filter removal. Complications during the procedure of retrieval like failure to remove the filter, distortion of the filter, migration of filter, presence of thrombus in the filter, local puncture site hematomas were noted.

**Results:** A total of 32 patients of DVT with acute PTE and Retrieval IVC filters implantations, were included in this study. Out of them 22 (68.75%) males and

10 (31.25%) females with mean age of 46.2 ± 12.6 years. In 15 patients(M:F:11:4) retrieval was attempted after complete clearance of DVT and PTE with average time period of 45 days (minimum - 25 days, maximum – one year). Successful retrieval was done in 13 patients (86.7%).Failed to retrieve in two patients (13.3%) in whom the implantation duration was one year. There were no distortion or migration of filter or local puncture site hematoma were noted. In 11 patients (11 out of 13- 84.6%) there was a small thrombus at the apex of the filter, which were confirmed by histo-pathology. No fatal complication like massive PTE or embolization of filter or IVC rupture or tears were noted.

**Conclusions:** The success rate of retrieval of IVC filters were good (86.7%) beyond the window period retrieval time coated by the company (15 to 21 days).Presence of small thrombus from the retrieved filter is very high (84.6%) without any clinical events.

#### TCT-519

##### The Multilayer Flow Modulator Stent for the Treatment of Popliteal Aneurysm

Michel C. Henry<sup>1</sup>, Amira Benjelloun<sup>2</sup>, Isabelle Henry<sup>3</sup>

<sup>1</sup>Cabinet de cardiologie, nancy, France, <sup>2</sup>Clinique Coeur et Vaisseaux, RABAT, Morocco, <sup>3</sup>Polyclinique Bois Bernard, BOIS BERNARD, France

**Background:** Popliteal Artery Aneurysms (PA) are traditionally treated surgically. Endovascular procedures with implantation of stent grafts or covered stents have been proposed as an alternative to surgery. Results are encouraging but some problems remain (aneurysm rupture, endoleaks, collateral branch thrombosis...). We used a new concept of stent, the Multilayer Flow Modulator (MFM\*) to treat aneurysms and try to avoid some drawbacks encountered with endografts.

**Methods:** This MFM\* is a 3 Dimensional braided tube made of several inter-connected layers without any covering. Our earliest tests in vitro (theoretical simulation, computerized Fluid dynamics, Molecular Modelization) and in vivo demonstrate that this MFM\* reduces the velocity in the aneurismal sac up to 90% by modifying the hemodynamic conditions. A saccular aneurysm without collateral branch will thrombose quickly. If a collateral branch is present the flow is directed towards this branch leading to shrinkage of the aneurysm. Animal experiments show excellent results. Moreover, as demonstrated in animal and human studies this MFM\* preserves the collateral branches allowing the possibility to cover any artery without compromising the flow (renal, digestive arteries, supra aortic vessels ...)

**Results:** 5 PA were treated with the MFM\* (male: 5, mean age: 65 y.) 9 stents ( $\phi$  6 to 8 mm, length 40 to 120 mm) were implanted by percutaneous ipsilateral femoral approach through 8F sheath. Technical success in all patients. All aneurysm thrombosed. Mid-term follow up will be presented. No stent fracture. This MFM\* seems well indicated for this popliteal location.

**Conclusions:** A new concept of stent, the MFM\* is developed to treat aneurysm. It opens a new approach to treat peripheral aneurysms avoiding most of the complications encountered with current endovascular techniques. The results obtained seem promising. A larger study is ongoing.

#### TCT-520

##### Gel Foam Embolization: Preoperative requisite

Ranjan Modi<sup>1</sup>, SANJAY PORWAL<sup>2</sup>, SURESHV PATTED<sup>3</sup>, PRABHUC HALKATI<sup>3</sup>

<sup>1</sup>kles dr. prabhakar kore hospial, belgaum, karnataka, <sup>2</sup>KLES DR PRABHAKAR KORE HOSPITAL, BELGAUM, Karnataka, <sup>3</sup>KLES DR Prabhakar Kore Hospital, Belgaum, India

**Background:** Juvenile nasopharyngeal angiofibroma (JNA) or nasopharyngeal angiofibroma is an uncommon fibrovascular mass arising in the nasopharynx of prepubertal and adolescent males. The tendency of the lesion for massive bleeding leading to life threatening complications has led to its considerable importance in medical fraternity. Preoperative biopsy is generally avoided for fear of massive lethal bleeding. The condition is most commonly treated by surgical excision and the surgical approach is chosen according to the disease stage. In view of their hypervascular nature and propensity for massive bleeding Juvenile angiofibromas may benefit from preoperative devascularization to reduce intraoperative blood loss. In our cases preoperative gel foam embolization was undertaken to reduce the vascularity.

**Methods:** We present a case report of 6 cases which were admitted in the otorhinology and surgery department with history of nasal breathing, nasal bleeding and vertigo. Using 7F arterial sheath through transfemoral approach multipurpose catheter (Asahi) was passed into the common carotid via the aorta. Selective injection was made into the vessel which helped visualization of the angiofibroma. A 0.014 X 190 BMW (Abott)/coronary guide wire was used to gain proximity to the root of the angiosarcoma. A Stride Microcatheter was passed over the guide wire. Selective injection through the microcatheter revealed the various branches of the angiofibroma. Gel foam which was prepared externally was injected through the microcatheter into the root of the angiosarcoma. Subsequent injections revealed gel embolization of the feeding vessel rendering the area almost avascular. The patient was subsequently taken up for the excision surgery within 2-3 days.

**Results:** Post surgery, blood supply retrieved in 5-6 days.

**Conclusions:** We conclude preoperative angiography is mandatory for identification of the feeding vessels in view of preoperative embolization before surgery in all cases of JNA. The use of the appropriate guide wire, microcatheter and proper formation of the gel solution is necessary for the successful attainment of avascular field preoperatively.